



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,548	01/16/2002	Sridevi Sarma	106221-0004	9642
21125 7590 08/19/2008 NUTTER MCCLENNEN & FISH LLP WORLD TRADE CENTER WEST 155 SEAPORT BOULEVARD BOSTON, MA 02210-2604				
EXAMINER COUGHLAN, PETER D				
ART UNIT 2129		PAPER NUMBER		
NOTIFICATION DATE 08/19/2008		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

doctet@nutter.com

### Office Action Summary

**Application No.**

10/051,548

**Applicant(s)**

SARMA ET AL.

**Examiner**

PETER COUGHLAN

**Art Unit**

2129

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 137, 138, 143-155 and 158-162 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 137, 138, 143-155 and 158-162 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/16/2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### Detailed Action

1. This office action is in response to an AMENDMENT entered May 28, 2008 for the patent application 10/051548 filed on January 16, 2002.
2. All previous Office Actions are fully incorporated into this Final Office Action by reference.

### ***Status of Claims***

3. Claims 137-138, 143-155, 158-162 are pending.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 137 and 158 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. These claims state 'revenue' is indicated by the association between the 'customer data' and the 'product data'. This is not supported by the specification. The word 'revenue' is not mentioned within the specification.

These claims must be amended or withdrawn from consideration.

Claim 137 and 158 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. These claims state there are 'association values' based on the 'first data set' and the 'second data set.' This is not disclosed within the specification.

These claims must be amended or withdrawn from consideration.

### ***35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement

thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 158-160, 162 are rejected under 35 U.S.C. 101 for nonstatutory subject matter. The computer system must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77. The invention is ineligible because it has not been limited to a substantial practical application. The method claim of generation of 'association values' based on customer data sets and product data sets has no practical application. The result has to be a practical application.

In determining whether the claim is for a "practical application," the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that the final result achieved by the claimed invention is "useful, tangible and concrete." If the claim is directed to a practical application of the § 101 judicial exception producing a result tied to the physical world that does not preempt the judicial exception, then the claim meets the statutory requirement of 35 U.S.C. § 101. There is no purpose for the 'association value' result. The 'association value' represents the 'strength or adequacy' between the two data sets but there use for this arbitrary value.

The invention must be for a practical application and either:

- 1) specify transforming (physical thing) or
- 2) have the FINAL RESULT (not the steps) achieve or produce a useful (specific, substantial, AND credible), AND concrete (substantially repeatable/ non-unpredictable), AND

tangible (real world/ non-abstract) result.

A claim that is so broad that it reads on both statutory and non-statutory subject matter, must be amended.

Method claims that recites pseudo code that represents a relationship between customers and products are not statutory. The applicant's argument and specification state the domain of the invention of an abstract nature due to the fact it has 'numerous applications.' There must be a result that is a practical application.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 137-138, 143-155, 158-160 are rejected under 35 U.S.C. 103(a) as being unpatentable over Passera et al in view of Cragun et al. (U. S. Patent 5909681, referred to as **Passera**; U. S. Patent 5971277, referred to as **Cragun**)

Claim 137

Passera teaches (A) one or more input devices for inputting the first and second data sets (**Passera**, C1:22-61; 'Input devices' of applicant is equivalent to 'input nodes' of Passera.) and association values representing an association between one or more elements of the first data set and one or more elements of the second data set (**Passera**, C1:22-61; 'Association values' of applicant are the results of the 'output nodes' of Passera.), wherein: the first data set represents customers. (**Passera**, C1:22-61; 'First data set represents customers' of applicant is equivalent to 'data bases containing records of millions of customers' of Passera.)

Passera does not teach the second data set represents products.

Cragun teaches the second data set represents products. (**Cragun**, C3:23-35; 'Second data set represents products' of applicant is equivalent to 'product database' of Cragun.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Passera by having a second data set of products as taught by Cragun to have the second data set represents products.

For the purpose of using both data sets to find correlations between customers and products for target marketing and increased profit.

Passera teaches the association values represent an association between customers of the first data set and products of the second data set and is indicative of revenue associated with the customers and the products (**Passera**, C1:22-61; 'Association values' which are indicative of 'revenue' of applicant is illustrated by ' ... looking for data patterns indicating which of those customers are sufficiently likely to buy

a given product ...' of Passera.); (B) a data processing system having a processor operable to: (i) modify a segmentation of each of the first and second data sets to produce first and second modified data sets having different groups than the first and second data sets (**Passera**, C1:22-61; The modification of the first and second data sets which are different than the original data sets occurs at the hidden layer network which is comprised by hidden layer nodes of Passera.); (ii) calculate group association values based on the association values, the group association values indicating an association between groups of the first modified data set and groups of the second modified data set (**Passera**, C6:21-29; The calculation of the 'group association values' of applicant is equivalent to the output of the 'output node' of the 'non-terminal node' of Passera.); (iii) calculate a metric based on the group association values, the metric representing a measure of an optimization of the segmentations (**Passera**, C7:51-65; 'Calculating a metric based on the group association values' of applicant is the comparison between the 'generated value produced at the output node' to the 'values supplied to the inputs' of Passera. 'Metric' of applicant is equivalent to 'weight' of Passera.); (iv) modify the segmentation of at least one of the first and second data sets and recalculating group association values and the metric (**Passera**, C7:51-65; 'Modify the segmentation' of applicant is equivalent to 'modifies the weights' of Passera.); (v) satisfy an optimization criteria by repeating (B)(iv) until the metric reaches a desired value (**Passera**, C7:65 through C8:4; 'Satisfy an optimization' of applicant is disclosed by 'training values for the output drops below a given level' of Passera.); and (vi) output



the segmentation for the first and second data sets. (**Passera**, C7:51-65; 'Outputting the segmentation' of applicant is equivalent to 'network's output' of Passera.)

Passera does not teach (C) a computer display for outputting the segmentation, wherein outputting the segmentation includes displaying a representation of the group association values on the computer display.

Cragun teaches (C) a computer display for outputting the segmentation, wherein outputting the segmentation includes displaying a representation of the group association values on the computer display. (**Cragun**, C4:26-36; 'Computer display' of applicant is equivalent to 'display screen' of Cragun.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Passera by outputting the results as taught by Cragun to have a computer display for outputting the segmentation, wherein outputting the segmentation includes displaying a representation of the group association values on the computer display.

For the purpose of seeing the results of associated values and employing them for revenue.

#### Claim 138

Passera teaches wherein the first and second data sets are categorical data sets. (**Passera**, C3:18-29; 'Categorical data sets' of applicant is equivalent to 'M sub spaces' of Passera.)

#### Claim 143

Passera teaches wherein the association values represent profit. (**Passera**, C1:22-61; 'Profit' of applicant is represented by 'marketing' of Passera.)

Claim 144

Passera does not teach wherein outputting the segmentation includes displaying a representation of the group association values.

Cragun teaches wherein outputting the segmentation includes displaying a representation of the group association values. (**Cragun**, C2:54-64; 'Outputting' of applicant is equivalent to 'display' of Cragun.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Passera by outputting group association values as taught by Cragun to have wherein outputting the segmentation includes displaying a representation of the group association values.

For the purpose of determining if a profit can be made by indication of group association values.

Claim 145

Passera teaches (B)(i) comprises aggregating and the number of groups of the first modified data set is less than the number of groups of the first data set. (**Passera**, C3:18-29; Passera discloses dividing the data space into M sub spaces where M is greater than or equal to P (processors). Mapping Passera to the application, 'number of

groups' of applicant is equivalent to P of Passera. 'First data set' of applicant is equivalent to data space of Passera.)

Claim 146

Passera teaches wherein (B)(i) comprises refining and the number of groups of the first modified data set is greater than the number of groups of the first data set. (**Passera**, C3:43-50; 'Number of groups of the first modified data set is greater ...' is accomplished by having a number of 'leaf nodes' being determined by a product of an integer to the number of P processors of Passera.)

Claim 147

Passera teaches wherein (B)(i) comprises both aggregating and refining. (**Passera**, C3:18-29 and 3:43-50; see claims 145 and 146)

Claim 148

Passera teaches wherein the value of the metric is optimal with respect to a set of admissible functions of the first and second modified data sets. (**Passera**, C7:51-65; The value of the weight or metric is modified to produce optimal results according to training data compared to desired results.)

Claim 149

Passera teaches wherein (B)(iv) comprises determining whether any of the first and second modified data sets has converged. (**Passera**, C7:66 through C8:4; Convergence of applicant is illustrated by the difference between the generated and record values for the output.)

Claim 150

Passera teaches wherein (B)(iv) comprises determining whether a matrix defined by a cross-space of the first and second modified data sets has converged. (**Passera**, abstract, 'Matrix defined by a cross space' of applicant is equivalent to a 'neural network' of Passera.)

Claim 151

Passera teaches wherein (B)(iv) comprises determining whether a function of a matrix defined by a cross-space of the first and second modified data sets has converged. (**Passera**, C7:66 through C8:4; Convergence of applicant is illustrated by the difference between the generated and record values for the output.)

Claim 152

Passera teaches wherein (B)(iv) further comprises determining whether an overall association value corresponding to an association between the first and second modified data sets has converged. (**Passera**, C1:22-61; 'Association values' of applicant is illustrated by '... looking for data patterns indicating which of those

customers are sufficiently likely to buy a given product ...' of Passera. If convergence has occurred, then there exists a connection between a customer and a product.)

Claim 153

Passera teaches wherein (B)(iv) comprises determining whether a permutation signifying an ordering of any of the first and second modified data sets has converged. (Passera, abstract, C1:22-61, C7:51 through C8:4; Per the specification in ¶0018, convergence of both P1 and P2 occur when solving a linear program. Neural networks are equivalent to linear programming based on summation of input vector values and multiplication by weights. Convergence manifests itself in a neural network by an output of an output node.)

Claim 154

Passera teaches wherein a matrix defined by a cross- space of the first and second data sets is populated with live data such that the matrix is dynamic. (Passera, C1:22-61; 'Live data' or 'dynamic' of applicant is data other than training data, or data which can be used by the invention to determine convergence of products to customers. Passera discloses the use to find 'potential customers' which illustrates the use of 'live data' or a 'dynamic' matrix.)

Claim 155

Passera teaches wherein (B)(iii) comprises calculating a value of a metric taken on a matrix, wherein the matrix defined by a cross-space formed by the first and second modified data sets and, wherein the metric is a linear arithmetic operation on a plurality of elements of the matrix. (**Passera**, abstract, C1:22-61, C7:51 through C8:4; Per the specification in ¶0018, convergence of both P1 and P2 occur when solving a linear program. 'Metric' of applicant is equivalent to 'weight' of Passera. Neural networks are equivalent to linear programming based on summation of input vector values and multiplication by weights. Convergence manifests itself in a neural network by an output of an output node.)

#### Claim 158

Passera teaches (A) inputting the first and second data sets and association values representing an association between one or more elements of the first data set and one or more elements of the second data set (**Passera**, C1:22-61; 'Inputting the first and second data sets' of applicant occurs at the 'input nodes' of Passera.), wherein: the first data set represents customers. (**Passera**, C1:22-61; 'First data set represents customers' of applicant is equivalent to 'data bases containing records of millions of customers' of Passera.)

Passera does not teach the second data set represents products.

Cragun teaches the second data set represents products. (**Cragun**, C3:23-35; 'Second data set represents products' of applicant is equivalent to 'product database' of Cragun.) It would have been obvious to a person having ordinary skill in the art at the

time of applicant's invention to modify the teachings of Passera by having a second database of products as taught by Cragun to have the second data set represents products.

For the purpose of determining a relationship between customers and products.

Passera teaches the association values represent an association between customers of the first data set and products of the second data set and is indicative of revenue associated with the customers and the products (**Passera**, C1:22-61; 'Association values' which are indicative of 'revenue' of applicant is illustrated by ' ... looking for data patterns indicating which of those customers are sufficiently likely to buy a given product ...' of Passera.); (B) modifying a segmentation of each of the first and second data sets to produce first and second modified data sets having different groups than the first and second data sets (**Passera**, C1:22-61; The modification of the first and second data sets which are different than the original data sets occurs at the hidden layer network which is comprised by hidden layer nodes of Passera.); (C) calculating group association values based on the association values, the group association values indicating an association between groups of the first modified data set and groups of the second modified data set (**Passera**, C6:21-29; The calculation of the 'group association values' of applicant is equivalent to the output of the 'output node' of the 'non-terminal node' of Passera.); (D) calculating a metric based on the group association values, the metric representing a measure of an optimization of the segmentations (**Passera**, C7:51-65; 'Calculating a metric based on the group association values' of applicant is the comparison between the 'generated value produced at the output node' to the

'values supplied to the inputs' of Passera. 'Metric' of applicant is equivalent to 'weight' of Passera.); (E) iteratively modifying the segmentation of at least one of the first and second data sets and recalculating group association values (**Passera**, C7:51-65; 'Modifying the segmentation' of applicant is equivalent to 'modifies the weights' of Passera.) and the metric until the metric represents an optimization level that equals or exceeds the desired level of optimization. (**Passera**, C7:65 through C8:4; 'Satisfy an optimization' of applicant is disclosed by 'training values for the output drops below a given level' of Passera.)

Passera does not teach (F) outputting the segmentation for the first and second data sets.

Cragun teaches (F) outputting the segmentation for the first and second data sets. (**Cragun**, C4:26-36; 'Outputting the segmentation' of applicant is accomplished by a 'display screen' of Cragun.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Passera by displaying the first and second data segmentation sets as taught by Cragun to output the segmentation for the first and second data sets.

For the purpose of seeing the results of associated values and employing them for revenue.

Passera teaches (G) offering products to customers based upon the outputted segmentation. (**Passera**, C1:22-61; 'Offering products to customers' of applicant is equivalent to 'direct marketing campaign' of Passera.)



Claim 159

Passera teaches wherein the first and second data sets are input into a computer for processing according to steps (B), (C), (D) and (E), steps (B), (C), (D) and (E) being implemented in software on the computer. (**Passera**, C3:18-29; 'Data sets are input into a computer' of applicant is equivalent to 'a computer system with P processors receives data objects having N parameters' of Passera.)

Claim 160

Cragun teaches wherein outputting the segmentation includes displaying a representation of the group association values on a computer display. (**Cragun**, C4:26-36; 'Computer display' of applicant is equivalent to 'display screen' of Cragun.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Passera by displaying results as taught by Cragun to output the segmentation includes displaying a representation of the group association values on a computer display.

For the purpose of using the group association values to aid in revenue generation decisions.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 161, 162 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Passera and Cragun in view of Von Kohorn. (U. S. Patent 5368129, referred to as **Von Kohorn**)

Claims 161, 162

Passera and Cragun do not teach wherein the association values are indicative of a purchase frequency of products by customers.

Von Kohorn teaches wherein the association values are indicative of a purchase frequency of products by customers. (**Von Kohorn**, C6:52-63; 'Association values' which are 'indicative of a purchase frequency' of applicant is disclosed by a 20% discount on every third cantaloupe and a 100% discount on every tenth cantaloupe of Von Kohorn.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Passera and Cragun by using purchasing frequency as a variable to determine association values as

Art Unit: 2129

taught by Von Kohorn to have the association values are indicative of a purchase frequency of products by customers.

For the purpose of giving the customer greater discounts while preventing the retailer inventory loss due to spoilage.

### ***Response to Arguments***

5. Applicant's arguments filed on May 28, 2008 for claims 137-138, 143-155, 158-162 have been fully considered but are not persuasive.

6. In reference to the Applicant's argument:

#### **REMARKS**

##### **Status of the Claims**

Claims 137, 138, 143-155, and 158-160 are pending in the present application, and in the outstanding office action, all of the claims stand rejected. New claims 161 and 162 are added.

##### **Inappropriate Examination of this Application**

This office action is the fifth in this application. As the fifth office action, it is the fifth time that all of the claims have been improperly rejected under 35 U.S.C. Section 101. Tellingly, several office actions ago: the "Examiner suggested to applicant if the claims were apparatus claims and a machine is performing the steps such as the step of

Art Unit: 2129

modifying a segmentation, the claims will be statutory," (see, January 31, 2006 Interview Summary) and the claims were rewritten to expressly follow the Examiner's suggestion. Indeed, claim 137 is the result of that Interview, and it has repeatedly been improperly rejected under 101.

How could all of these 101 rejections be so improper- quite simply, the Examiner has not read the claims (and it is quite apparent that the dependent claims have never been considered or examined).

For example, the only basis for the 101 rejection in the outstanding office action of all claims is that "The generation of 'association values' based on customer data sets and product data sets has no practical application." The Examiner notes, as has been noted in every office action, that "The specification also states numerous marketing applications based on the original object sets such as 'targeting/personalization', 'policy/promotion design, 'policy/promotion response analysis; 'design of new products and or product bundles' and 'design of new product hierarchies.'" Indeed, previous office actions have expressly noted that these things are statutory. (See, December 8, 2005 Office Action at page 3.)

Contrary to the rejection, the FINAL STEP of independent method claim 158 is "offering products to customers based upon the outputted segmentation." The "generation of 'association values'" is not now and has never been the FINAL RESULT of any claim. That it is still the basis of the rejection of every claim in the application through five office actions is unacceptable.

Further examples of the inappropriateness of the examination in this case abound. Applicants have expressly warned the Examiners in this case about requirements against piecemeal prosecution, reminding the Examiners more than once:

Section 2106 of the Manual of Patent Examining Procedure further provides:

It is essential that patent applicants obtain a prompt yet complete examination of their applications. Under the principles of compact prosecution, each claim should be reviewed for compliance with every statutory requirement for patentability in the initial review of the application, even if one or more claims are found to be deficient with respect to some statutory requirement. Thus, Office personnel should state all reasons and bases for rejecting claims in the first Office action. Deficiencies should be explained clearly, particularly when they serve as a basis for a rejection. Whenever practicable, Office personnel should indicate how rejections may be overcome and how problems may be resolved. A failure to follow this approach can lead to unnecessary delays in the prosecution of the application.

Prior to focusing on specific statutory requirements, Office personnel must begin examination by determining what, precisely, the applicant has invented and is seeking

Art Unit: 2129

to patent, and how the claims relate to and define that invention. (As the courts have repeatedly reminded the Office: "The goal is to answer the question 'What did applicants invent?' " In re Abele, 684 F.2d 902, 907, 214 USPQ 682, 687. Accord, e.g., Arrhythmia Research Tech. v. Corazonix Corp., 958 F.2d 1053, 1059, 22 USPQ2d 1033, 1038 (Fed. Cir. 1992).) Consequently, Office personnel will no longer begin examination by determining if a claim recites a "mathematical algorithm." Rather they will review the complete specification, including the detailed description of the invention, any specific embodiments that have been disclosed, the claims and any specific, substantial, and credible utilities that have been asserted for the invention.

Applicants, while disagreeing with the Examiner's conclusion that the claims "recite [a] mathematical algorithm without [a] concrete and tangible result directed to a practical application," have amended the claims and reduced their number in an effort to clarify the scope of the claimed invention. No other rejections or objections have been made; in particular, no material prior art has been cited. [See, e.g., September 22, 2005 Amendment at page 7. ]

Despite these express warnings, the Examiner now rejects Claim 137 for the first time under Section 112. There is nothing new about claim 137 - other than the incorporation of the elements of dependent claims 139 to 142, which have been pending through several office actions (and which the Examiner has apparently never read).

In addition, this fifth office action applies prior art for the first time. Of course, as explained below, this prior art is irrelevant and does not even qualify as background for the claims. The fact that this rejection has never been made through all of the previous prosecution, including prosecution of the very claims that are now rejected, evidences the lack of merit in the rejection.

Still further, Applicants have expressly asked the Examiner to review dependent claims 159 and 160 for 101 purposes - this request has obviously fallen on deaf ears as the Examiner has never even considered the subject matter of Independent claim 158 (the recitations of claims 158, 159 and 160 are never mentioned in the 101 rejection):

New method claims 158-160, which are substantially similar to previous method claims 115 et seq. with the addition of a step of offering products to customers, are likewise patentable. Applicant expressly requests that the Examiner review dependent claims 159 and 160 and not simply reject independent claim 158 without considering the subject matter of the dependent claims as has been done in previous office actions. [September 27, 2007 Amendment, p. 11.]

This piecemeal examination is unacceptable.

Rejection ( Claims 137-157 Under 35 U.S.C. 101

Art Unit: 2129

The Examiner states that claims 137-138, 143-155, 158-160 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter.

Specifically, in the rejection the Examiner states that:

The computer system must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson. 409 U.S. at 71-72, 175 USPQ at 676-77. The invention is ineligible because it has not been limited to a substantial practical application. The generation of 'association values' based on customer data sets and product data sets has no practical application. The result has to be a practical application. Additionally, the specification discloses preemption based on 0179 wherein the specification states, 'There exists numerous marketing applications by a SAM. (Single Association Model) In determining whether the claim is for a "practical application," the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that the final result achieved by the claimed invention is "useful, tangible and concrete." If the claim is directed to a practical application of the § 101 judicial exception producing a result tied to the physical world that does not preempt the judicial exception, then the claim meets the statutory requirement of 35 U.S.C. 101.

There is no purpose for the 'association value' result. The 'association value' represents the 'strength or adequacy' between the two data sets but there use for this arbitrary value. The specification also states numerous marketing applications based on the original object sets such as 'targeting/personalization', 'policy/promotion design', 'policy/promotion response analysis', 'design of new products and or product bundles', and 'design of new product hierarchies.'

The invention must be for a practical application and either: i) specify transforming (physical thing) or  
2) have the FINAL RESULT (not the steps) achieve or produce a useful (specific, substantial, AND credible), concrete (substantially repeatable! non-unpredictable), AND tangible (real world non-abstract) result.  
A claim that is so broad that it reads on both statutory and non-statutory subject matter, must be amended.

Claims that recite computer pseudo code that represents a relationship between customers and products are not statutory. The applicant's argument and specification state the domain of the invention, of an abstract nature due to the fact it has 'numerous applications.' There must be a result that is a practical application.

There must be one invention per application.

Art Unit: 2129

This is the fifth office action in a row to make improper section 101 rejections in this case. It is time for this inappropriate and improper rejection to be removed.

The Examiner is Wrong About Several Things:

First, the Examiner misquotes the application at paragraph 179 regarding Single Association Models. The quote provided in the office action is wrong and the Examiner has changed its meaning. The actual language that the Examiner incorrectly put into the office action is actually: "There exist numerous marketing applications enabled by a SAM, defined earlier." The Examiner leaves out the word "enabled" - and leaves out the reference to the definition in the specification of SAM - and thereby changes the meaning of this sentence. There is no "preemption." This statement reflects the fact that the SAM, defined in the specification to be an aspect of the present invention, enables numerous marketing applications that are further defined in the specification and are now claimed in independent claims 137 and 158.

The Examiner has misquoted the specification to change its meaning, then based the 101 rejection on this incorrect meaning. This rejection should be immediately removed and should not be made final as the Examiner is simply wrong.

Further, the only factual basis for the 101 rejection is that "association values" have "no practical application" and "no purpose." However, the Examiner also correctly notes that it is the "FINAL RESULT" of the claims that must achieve or produce a useful, concrete and tangible result. The "association values" are not the "FINAL RESULT" of any claim. Rather, the final result of independent claim 137 is "a computer display for outputting the segmentation" - where the segmentation is the result generated by a processor that optimizes the segmentation of customers and the products that they buy. "Association values" is never a final result.

The Examiner's position is even more wrong when considering independent method claim 158 - where the final step in the method is "offering products to customers based upon the outputted segmentation."

The Examiner is wrong that "association values" are the "FINAL RESULT" of the claims. This rejection should be immediately removed and should not be made final as the Examiner is simply wrong.

The Pending Claims are Statutory:

The Examiner has already said that claim 137 is statutory: The "Examiner suggested to applicant if the claims were apparatus claims and a machine is performing the steps such as the step of modifying a segmentation, the claims will be statutory," (see, January 31, 2006 Interview Summary). The claims were rewritten to expressly follow the Examiner's suggestion.

Art Unit: 2129

Claim 137 defines a "machine" that includes hardware structures, namely, an input device and a data processing system having a processor. Further, the processor executes a specific task so as to generate tangible results. More particularly, Claim 137 recites a system for determining a preferred segmentation for at least first and second sets of data. The system includes one or more input devices (see Figures 1 and 2, as well as page 39 of the application at lines 7 to 9) for inputting of the first and second sets of data, along with association values that can be used to relate one or more elements of the first data set with one or more elements of the second data set. A data processing system (page 39, lines 1 to 3, described also at page 28) includes a processor (Figures 1 and 2, page 39) is operable to modify the segmentation of each data set, calculate group association values based on the association values, and calculate an optimization metric based on the group association values. Where the desired level of optimization is not achieved in a first pass, the processor repeats these activities. Where the desired level of optimization is satisfied, the newly optimized segmentation for the first and second data sets is outputted.

Claim 137 also recites that one of the data sets represents customers, that one of the data sets represents products, and that the association values represent an association between the customers and products in the two data sets. Claim 137 further recites that the association value that represents an association between the customers and the products represents revenue. Finally, claim 137 includes the recitation that a display is provided to present these dollar values to the user. Thus, when the system of the claims displays the association values to a user of the system - it is presenting dollar values exactly like State Street discussed below.

Claim 137 expressly recites one specific exemplary practical application - associating customers with products according to revenue. This practical application is described in the specification at pages 17 to 18 and 30 to 34. In claim 137, the first and second data sets represent customers and products, and the association value represent revenues. In this embodiment, raw transaction data (a customer, the products purchased by the customer, and money paid by the customer for the products) is input, and an optimized segmentation of customer and product groupings is output and displayed to a user, presumably a marketing professional. Segmenting customers and products into groups based upon the optimization of revenue and/or profit is a practical application that marketing professionals would readily understand. In fact, the Examiner has already noted that "marketing products" is a "useful area." (See, December 8, 2005 Office Action at page 3.)

Examiner's response:



Art Unit: 2129

Based on changes in Office Policies concerning 35 U.S.C. §101, the Examiner is permitted to withdraw this rejection on the first set of claims (Claim #'s 137-138, 143-155, 161).

7. In reference to the Applicant's argument:

Claim 158 defines a practical application that is useful, concrete and tangible by reciting the offering of products to customers. The Examiner has never addressed this claim. It is statutory.

Section 2106 of the Manual of Patent Examining Procedure provides:

The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)). Accordingly, a complete disclosure should contain some indication of the practical application for the claimed invention, i.e., why the applicant believes the claimed invention is useful.

MPEP 2106(IV)(C)(2)((2)) further states:

...USPTO personnel shall review the claim to determine it produces a useful, tangible, and concrete result. In making this determination, the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but rather on whether the final result achieved by the claimed invention is "useful, tangible, and concrete."

The present rejection, in which He Examiner ignores the tangible results provided, Nils His test. Following He guidelines enumerated in His section of He MPEP, He result is concrete as it is predictable and repeatable (MPEP 2106(IV)(C)(2)((2))(c)). Each time He claimed invention is used, it will produce customer and product data sets Hat are ordered into an optimized segmentation according to revenue generation and output Hat segmentation to display for a marketing professional. The result is tangible as it is a

Art Unit: 2129

real world result (MPEP 2106(IV)(C)(2)((2))(b)). The result is also useful in that the outputs are specific, substantial, and credible (MPEP 2106(IV)(C)(2)((2))(a)).

Not only do the claims recite statutory subject matter under the Patent Office guidelines, but they also comport with the case law.

The Court of Appeals for the Federal Circuit (CAFC) has held that a claim directed to a machine formed from a combination of related elements that provides "a useful, concrete and tangible result" is statutory subject matter under § 101. *Alappat v. Averill*, 33 F.3d 1526, 1544 (Fed. Cir. 1994). For example, in *Alappat*, the Court held that a claim directed to a machine that converts data representing sample magnitudes of an input waveform, via mathematical operations, into pixel illumination intensity data is statutory subject matter under § 101. The Court reasoned that the claim was directed to a machine, which is one of the four categories of patentable subject matter, and hence it appeared on its face to be directed to §101 subject matter. Further, the claim did not recite a "disembodied mathematical concept which may be characterized as an "abstract idea," but rather a specific machine to produce a useful, concrete, and tangible result." *Id* at 1544. In particular, the Court noted that the pixel illumination data could be used to produce a smooth waveform display. *Id*. The Court emphasized that "[T]he fact that the four claimed means elements function to transform one set of data to another through what may be viewed as a series of mathematical calculations does not alone justify a holding that the claim as a whole is directed to nonstatutory subject matter." *Id*.

In *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, the CAFC further reiterated that claims directed to transformation of data into useful, tangible results are statutory subject matter under § 101. More specifically, the Court held that "the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces "a useful, concrete and tangible result"-- a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." *State St. Bank & Trust Co.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998).

Similar to *Alappat* and *State Street Bank*, Applicants' claimed invention is directed to a "machine," in the form of a system comprising an input device and a data processing system including a processor and computer display, that is on its face statutory subject matter. More specifically, similar to *Alappat* and *State Street*, claim 137 recites specific structures (a data processing system having a processor, as compared to processing means in the form of arithmetic logic circuits in *Alappat* and *State Street*) that transform one set of data (first and second data sets and association values in claim 137, sample magnitudes of an input waveform in *Alappat*, and discrete dollar amounts in *State Street*) into a tangible and useful output (optimized segmentations of the first and

Art Unit: 2129

second data sets in claim 137, pixel illumination intensity data in Alappat, and final share price in State Street).

Perhaps the most relevant case law is AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 50 USPQ2d 1447 (Fed. Cir. 1999). There, the Federal Circuit held that methods implemented in software on a computer system that accepted input data, manipulated that data into a new form, and outputted that new form for use in a practical application (such as the marketing of products to customers as the Examiner has admitted in this case) constituted patentable subject matter.

When the system of the claims displays the revenue-based association values to a user of the system - it is presenting dollar values exactly like State Street, including the recitation that a display is provided to present these dollar values to the user.

Examiner's response:

Based on changes in Office policies concerning 35 U.S.C. §101, the Examiner is not permitted to withdraw this rejection on the second set of claims (Claim #'s 158-160, 162). The claim language fails to meet the current standard of a method claim which is not connected to machine implementation.

8. In reference to the Applicant's argument:

Rejection of Claims 137 and 158 Under 35 U.S.C. 112

The Examiner states that claims 137 and 158 are rejected under 35 U.S.C. 112 as failing to comply with the written description requirement. Specifically, the Examiner states that:

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. These claims state 'revenue' is indicated by the association between the

Art Unit: 2129

'customer data' and the 'product data' This is not supported by the specification. The word 'revenue' is not mentioned within the specification.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. These claims state there are 'association values' based on the 'first data set' and the 'second data set.' This is not disclosed within the specification ....

[T]he specification, while being enabling for 'data sets', does not reasonably provide enablement for 'modify a segmentation of each of the first and second data sets.' The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to 'modify ,a segmentation of each of the first and second data sets' the invention commensurate in scope with these claims. This is only mentioned in 1{0241 without any description how this is accomplished.

These claims must be amended or withdrawn from consideration.

The Examiner provides three incorrect bases for the 112 rejections. Applicants address each incorrect basis below.

Improper in *ipsis verbis* Rejection on "Revenue"

First, the Examiner makes an inappropriate and incorrect in *ipsis verbis* written description rejection based on the word "revenue." See, e.g., *Vas-Cath*, 935 F.2d at 1563, 19 USPQ2d at 1116; *Martin v. Johnson*, 454 F.2d 746, 751, 172 USPQ 391,395 (CCPA 1972) (stating "the description need not be in *ipsis verbis* [i.e., "in the same words"] to be sufficient"); MPEP 2163. It is clear that this rejection is based only on the Examiner's single word searching of the application. That the Examiner's approach is improper is black letter law.

In making this rejection, the Examiner has plainly ignored the fact that claims using the word "revenue" have been pending through several office actions and were specifically highlighted in Applicants' comments, for example, at page 11 of Applicants' May 4, 2006 Response to Final Office Action Filed with RCE, where the Applicants point the Examiner to pages 17 to 18, and 30 to 34 of the application as filed.

Indeed, in that previous Response, Applicants specifically pointed to pages 17 to 18 of the application as filed (which describes the use of customer and product data sets as the "object sets"), where "sales data" is used to populate the data sets - by any common definition: sales = revenue. Further, the text at pages 30 to 34 specifically describes using "purchase frequency" at known prices in the model (see, in particular, page 33). Again, by any definition, revenue = purchase frequency X price. Applicants have further

Art Unit: 2129

added two dependent claims to specifically recite "purchase frequency" in place of revenue. The claim recitation is supported in the specification.

Examiner's response:

'Revenue' is not mentioned within the specification. The Applicant argues that 'sales data' is used to populate the data sets - by any common definition: sales = revenue.' Paragraph 0086 of the specification states 'So not only does the purchase behavior of a consumer segment influence sales figures for a product segment but results of marketing studies using the sales data will then be used to generate advertising and targeting campaigns that will in turn influence the sales data, and so on.' This paragraph states other information concerning a 'sale' which can be used to generate advertising and targeting campaigns. These are two different domains which the Applicant is stating are equivalent based on the argument that 'sales=revenue.' The Examiner disagrees and the Office Action stands.

9. In reference to the Applicant's argument:

The Remainder of the 112 Rejections are Incorrect by Definition

The Examiner objects to the term "modify a segmentation of each of the first and second data sets" as described only in paragraph 241; and to "association values" based on the "first data set" and the "second data set." All of these terms are supported extensively throughout the specification - in fact, one might say that they are the point of the application.

The application provides that "an object set as herein used is the most general and broadest type of set." The application goes on to state:

One aspect of object sets is that they may be comprised of elements which are themselves object sets. In some embodiments, the present application discloses and claims methods for optimally segmenting an object super set into a plurality of object subsets. The segmentation is considered to have a granularity or "resolution" which can range from the coarsest resolution of a single-element object set to the finest resolution, where a substantially limitless division of objects in the object set can be implemented. Increasing the number of elements in an object set by further subdivision and/or redistribution of its elements is referred to herein as "refinement." Refinement increases the cardinality (or number of elements) of the object set.

The process of aggregating and/or refining elements of an original object set is herein referred to as "modification" of the original object set. Thus a "modified object set" comprises elements that correspond to the elements of an original object set through either refinement, aggregation or both. For example one original element or object, A, may be first split into two elements, A1 and A2 and then A1 may be further split into Alx and Aly in a refinement operation, while A2 can be combined with a different original element, B, in an aggregation operation. Note that in some cases a mere permutation of the original object set is accomplished or only a resorting or ordering is performed on the original object set. Additionally, some elements of an original object set may be altered while others are left unchanged. The present application uses the term "drilling" in some instances to signify moving to a more detailed finer resolution model or level of granularity, while using the term "aggregating" to signify moving up to a coarser level of granularity in the modeling.

Modifications of object sets include aggregation, refinement, or ordering of the sets. Elements of a modified object set are sometimes called segments. Discussed below are some specific aspects of various types of modifications, which are generally carried out using a modifier that can be implemented e.g. in a data processing system using software. [para. 47-51]

Thus, by definition, any time one aggregates or refines object sets or subsets, one is modifying a segmentation. This is supposed throughout the application.

Further, the practical marketing applications that are presently claimed rely on the object sets being "data sets." The application states this clearly:

Object sets may comprise categorical data sets. The term "categorical data set" (CDS) is used herein to refer to an object set whose elements share a common feature or attribute, which can be used to categorize the data. Two CDSs can be associated with one another as discussed earlier ....[para. 67]

Art Unit: 2129

A group of consumers having some attributes and placed in a first object set, for example in a categorical data set, can be optimally matched to a corresponding group of available products, having some attributes and placed in a second categorical data set, by associating the first and second categorical data sets. [para. 83]

Categorical data sets are thus one type of object set and can be associated in the same way as object sets as described above. Consumers and products are just such categorical data sets and are associated in the same way and "modified" and segmented in the same way. See, para. 185 (modifying object sets comprising customer data sets and product data sets Mat result in customer segments and product segments). The final segmentation is the result of the optimization process described in Me application and included in the claims.

These claims are properly supported.

Examiner's response:

There are two remaining 35 U.S.C. §112 rejections and the applicant is unclear what he is addressing here. The Examiner withdraws the 35 U.S.C. §112 rejection for claims 137 and 158 under enablement. The rejection under 35 U.S.C. §112 under written description for the lack of description for 'association values' stands. There lacks an algorithm, method or system which describes in detail how these values are generated. Office Action stands.

10. In reference to the Applicant's argument:

Rejection Of Claims 137-138, 143-155, 158-160 Under 35 USC §103

Art Unit: 2129

Claims 137-138, 143-155, and 158-160 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,909,681 (Passera et al.) in view of Cragun et al. (U.S. Patent No. 5,971,277). Specifically, the Examiner states:

## Claim 137

Passera teaches (A) one or more input devices for inputting the first and second data sets (Passera, C1 :22- 61; 'Input devices' of Applicant is equivalent to 'input nodes' of Passera.) and association values representing an association between one or more elements of the first data set and one or more elements of the second data set (Passera, C1 :22-61; 'Association values' of applicant are the results of the 'output nodes' of Passera.), wherein: the first data set represents customers. (Passera, C1 :22- 61; 'First data set represents ,customers' of ,applicant is equivalent to 'data bases containing records of millions of customers' of Passera.)

Passera does not teach the second data set represents products.

Cragun teaches the second data set represents products. (Cragun, C3:23-35; 'Second data set represents products' of applicant is equivalent to 'product database' of Cragun.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Passera by having a second data set of products as taught by Cragun to have the second data set represents products.

For the purpose of using both data sets to find correlations between customers and products for target marketing and increased profit.

Passera teaches the association values represent an association between customers of the first data set and products of the second data set and is indicative of revenue associated with the customers and the products (Passera, C1 :22-61; 'Association values' which are indicative of 'revenue' of applicant is illustrated by looking for data patterns indicating which of the customers are sufficiently likely to buy a given product ... ' of Passera.); (B) a data processing system having a processor operable to: (i) modify a segmentation of each of the first and second data sets to produce first and second modified data sets having different groups than the first and second data sets (Passera, C1 :22-61; The modification of the first and second data sets which are different than the original data sets occurs at the hidden layer network which is comprised by hidden layer nodes of Passera.); (ii) calculate group association values based on the association values, the group association values indicating an association between groups of the first modified data set and groups of the second modified data set (Passera, C6:21-29; The calculation of the 'group association values' of applicant is equivalent to the output of the 'output node' of the 'non-terminal node' of Passera.); (iii) calculate a metric based on the group association values, the metric representing a measure of an optimization of the segmentations (Passera, C7:51-65; 'Calculating a



Art Unit: 2129

metric based on the group association values' of applicant is the comparison between the 'generated value produced at the output node' to the 'values supplied to the inputs' of Passera. 'Metric' of applicant is equivalent to 'weight' of Passera.); (iv) modify the segmentation of at least one of the first and second data sets and recalculating group association values and the metric (Passera, C7:51-65; 'Modify the segmentation' of applicant is equivalent to 'modifies the weights' of Passera.); (v) satisfy an optimization criteria by repeating (S) (iv), until the metric reaches a desired value (Passera, C7:65 through C8:4; 'Satisfy an optimization' of applicant is disclosed by training values for the output drops below a given level' of Passera.); and (vi) output the segmentation for the first and second data sets. (Passera, C7:51-65; 'Outputting the segmentation' of applicant is equivalent to 'network's output' of Passera.)

Passera does not teach (C) a 'computer display for outputting the segmentation, wherein outputting the segmentation includes displaying a representation of the group association values on the computer display.

Cragun teaches (C) a computer display for outputting the segmentation, wherein outputting the segmentation includes displaying a representation of the group association values on the computer display. (Cragun, C4:26- 36; 'Computer display' of applicant is equivalent to 'display screen' of Cragun.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Passera by outputting the results, as taught by Cragun to have a computer display for outputting the segmentation, wherein outputting the segmentation includes displaying a representation of the group association values on the computer display.

For the purpose of seeing the results of associated values and employing them for revenue.

#### Claim 158

Passera teaches (A) inputting the first and second data sets and association values representing an association between one or more elements of the first data set and one or more elements of the second data set (Passera, C1 :22-61; 'Inputting the first and second data sets' of applicant occurs at the 'input nodes' of Passera.), wherein: the first data set represents customers. (Passera, C1 :22-61; 'First data set represents customers' of applicant is equivalent to 'data bases containing records of millions of customers' of Passera.)

Passera does not teach the second data set represents products.

Cragun teaches the second data set represents products. (Cragun, C3:23-35; "Second data set represents products' of applicant is equivalent to 'product database' of Cragun.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Passera by having a second database of products as taught by Cragun to have the second data set represents products.

Art Unit: 2129

For the purpose of determining a relationship between customers and products.

Passera teaches the association values represent an association between customers of the first data set and products of the second data set and is indicative of revenue associated with the customers and the products (Passera, C1 :22-61; 'Association values' which are indicative of 'revenue' of applicant is illustrated by , ... looking for data patterns indicating which of those customers are sufficiently likely to buy a given product ... ' of Passera.); (8) modifying, a segmentation of each of the first and second data sets to produce first and second modified data sets having different groups than the first and second data sets (Passera, C1 :22-61; The modification of the first and second data sets which are different than the original data sets occurs at the hidden layer network which is comprised by hidden layer nodes of Passera.); (C) calculating group association values based on the association values, the group association values indicating an association between groups of the first modified data set and groups of the second modified data set (Passera, C6:21-29; The calculation of the 'group association values' of applicant is equivalent to the output-of the 'output node' of the 'non-terminal node' of Passera.); (D) calculating a metric based on the group association values, the metric representing a measure of an optimization of the segmentations (Passera C7:51-65; 'Calculating a metric based On the group association values' of applicant is the comparison between the 'generated value produced at the output node' to the 'values supplied to the inputs' of Passera. 'Metric' of applicant is equivalent to 'weight' of Passera.); (E) iteratively modifying the segmentation of at least one of the first and second data sets and recalculating group association values (Passera, C7:51-65; 'Modifying the segmentation' of applicant is equivalent to 'modifies the weights' of Passera.) and the metric until the metric represents an optimization level that equals or exceeds the desired level of optimization. (Passera, C7:65 through C8:4; 'Satisfy an optimization' of applicant is disclosed by 'training values for the output drops below a given level' of Passera.)

Passera does not teach (F) outputting the segmentation for the first and second data sets.

Cragun teaches (F) outputting the segmentation for the first and second data sets. (Cragun, C4:26-36; 'Outputting the segmentation' of applicant is accomplished by a 'display screen' of Cragun.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Passera by displaying the first and second data segmentation sets as taught by Cragun to output the segmentation for the first and second data sets.

For the purpose of seeing the results of associated values and employing them for revenue.

Passera teaches (G) offering products to customers based upon the outputted

Art Unit: 2129

segmentation. (Passera, C1 :22-61; 'Offering products to customers' of applicant is equivalent to 'direct marketing campaign' of Passera.)

Passera, the primary reference relied upon by the Examiner to make the obviousness rejection, is wholly irrelevant to the claimed invention. The Examiner relies primarily on the BACKGROUND section of Passera, which states that data mining through customer databases is difficult because it requires large amounts of computing power. The invention of Passera involved associating data with separate processors to allow for faster processing. This has nothing to do with the claimed invention.

Indeed, the Examiner relies solely on the fact that the background of Passera discloses that customer data exists and that people want to mine it as the only teaching for optimizing customer and product segments as claimed. The prima facie obviousness case fails flatly for this reason alone.

The remaining portions of Passera cited by the Examiner are likewise wholly irrelevant to the claimed invention. The portion cited at column 6 merely introduces a well known neural tree network that is irrelevant to the claimed invention and the portion cited at column 7 is merely a schematic for training the neural network. Optimizing the training of a neural network so that it can allow multiple processors to crunch data more efficiently has nothing to do with the claimed invention. The Examiner states without support that the "Association values" of applicant are the results of the 'output nodes' of Passera." The output nodes of Passera are used to train the nodes of a neural network as to how to process data more efficiently. There is no relevance to the association values as claimed

Examiner's response:

There is nothing prohibiting the use of 'background' section of a reference by an Examiner. 'Association values' which are indicative of 'revenue' of applicant is illustrated by '... looking for data patterns indicating which of those customers are sufficiently likely to buy a given product ...' of Passera. (**Passera**, C1:22-61)

11. In reference to the Applicant's argument:

Art Unit: 2129

Cragun, the secondary reference cited by the Examiner, is likewise wholly irrelevant. Cragun provides a computer with a scanner that allows a consumer to scan a code from a product, then pull information about that product to display to the consumer. [See, e.g., Col. 2, lines 16-24.] It fills in none of the missing teachings described above (though Applicants admit that the Examiner is correct that Cragun has a display and references products - the only things that Cragun is cited for).

Accordingly, the cited references, alone or combined, teach nothing having anything to do with the claimed invention.

Examiner's response:

Cragun was introduced to disclose a second data set and a display. Cragun is a mechanism for retrieving information. Since the claimed invention has very broad claims, the Examiner feels this reference is not irrelevant.

### ***Examination Considerations***

12. The claims and only the claims form the metes and bounds of the invention.

"Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, I 45-48; p 2100-9, c 1, I 1-4). The Examiner has the full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the

Art Unit: 2129

art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

13. Examiner's Notes are provided to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and sprit of compact prosecution. However, and unless otherwise stated, the Examiner's Notes are not prior art but link to prior art that one of ordinary skill in the art would find inherently appropriate.

14. Examiner's Opinion: Paragraphs 12 and 13 apply. The Examiner has full latitude to interpret each claim in the broadest reasonable sense.

### ***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Claims 137-138, 143-155, 158-162 are rejected.

***Correspondence Information***

17. Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner Peter Coughlan, whose telephone number is (571) 272-5990. The Examiner can be reached on Monday through Friday from 7:15 a.m. to 3:45 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor David Vincent can be reached at (571) 272-3080. Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,  
Washington, D. C. 20231;

Hand delivered to:

Receptionist,  
Customer Service Window,  
Randolph Building,  
401 Dulany Street,  
Alexandria, Virginia 22313,

(located on the first floor of the south side of the Randolph Building);

or faxed to:

(571) 272-3150 (for formal communications intended for entry.)

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for unpublished applications is available through Private PAIR only. For more information

Art Unit: 2129

about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

/P. C./

Examiner, Art Unit 2129

Peter Coughlan

8/14/2008

/Joseph P. Hirt/

Primary Examiner, Art Unit 2129